

Integrated Math & Social Studies Lessons

Hidden Figures

2017

SSR- Silent Sustained Reading Activity

Maureen Miller

Hope Bragg

Christy Keefer

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SSR—Silent Sustained Reading Activity

Standards Addressed:

Science Literacy

S.6-8.L.1 Cite specific textual evidence to support analysis of science and technical texts.

S.6-8.L.2 Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.

S.6-8.L4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.

S.6-8.L.8 Distinguish among facts, reasoned judgement based on research findings, and speculation in text.

S.6-8.L.12 Write informative/explanatory text, including the narration of historical events, scientific procedures/experiments or technical processes.

S.6-8.L.18 Draw evidence from informational texts to support analysis, reflection, and research.

Social Studies

SS.8.H.CL6.2 Evaluate the sequence and analyze the impact of contemporary social, economic, and technological developments on people and culture in WV.

SS.8.H.CL6.4 Examine the economic, social, and political impact of 20th century events on WV.

On Day 1, model and practice with students how to do Silent Sustained Reading. Practice the expectations, taking students out to hallway so they know how to enter the room and begin reading. Repeat the process of entering and begin reading until students get it right. It is imperative that they understand the expectations. Time should be 15 minutes of SSR which should begin when the last student has seated and begun reading. Students should be instructed how to mark their reading place using the "sign here" tabs. The goal is time not to a certain chapter or paragraph. This encourages students to continue reading as some read at different paces. The process may need to repeated daily until students conform to expectations.

After 15 minutes of SSR pass out or post on board the short answer questions. The students should be given 5 minutes to write the answers in their journals. They can refer to passages in the book as needed. For the first three days, the instructor should lead class discussion regarding the reading passages for the day. After the three days other strategies such as discussion in pairs, discussion in table groups, and gallery walk can be used to support discussion. Time should be limited to 5 to 6 minutes. After discussion, journal reflection question should be posted with students permitted 5 minutes to respond in their journals. Students should be encouraged to read over their previous responses. Some students will ask about the minimum amount to write, at which I would suggest four to five well-constructed sentences.

Journal Response Questions for SSR of Hidden Figures Young Readers' Edition—Fact Based

Chapters 1-3

- 1. Who were the four remarkable women that the book Hidden Figures is based upon?
- 2. Why are their accomplishments so impressive?
- 3. What was the event that opened the door for their careers? Why?
- 4. What did A. Philip Randolph do?
- 5. What is the name of a historical black college close to home (within 20 miles)?
- 6. Vaughan was considering changing jobs, why?

Chapters 4-6

- 1. What were the conditions of the school where Vaughan taught?
- 2. What kind of support system did Vaughan have that helped her make her decision to leave Farmville for Langley?
- 3. What was the ruling on Morgan v. Virginia?
- 4. What kind of relationship did the black women of West Computing have and why do you think so?

Chapter 7

- 1. Who were the Tuskegee Airmen?
- 2. What was the primary focus of the National Advisory Committee for Aeronautics at Langley for which Vaughan worked?

Chapter 8

- 1. What was V-J Day?
- 2. What conditions did black Americans, especially black female Americans, face after V-J Day?

Chapter 9

- 1. What struggles did Vaughn face after the war?
- 2. What happened on October 14, 1947?

Chapter 10

- 1. What was Mary Jackson's ideas in relation to young women?
- 2. What happened on April 5, 1951 and what did this event spark?
- 3. What did President Truman do to address these concerns?

Chapter 11

- 1. What did Mary Jackson experience that caused her to find her voice and speak up?
- 2. What was Mary Jackson's work ethic like?

Chapter 12

1. Who inspired Katherine Gobel to achieve and how did they influence her?

Chapter 13

- 1. What plane crash problem did Katherine Gobel solve?
- 2. How does her solution apply to flight travel today?
- 3. What happened in 1956 that changed Katherine's life?

Chapter 14

- 1. What was Vaughan keen to recognize that helped to ensure the future of computers in her department?
- 2. This ability to recognize a need and respond appropriately is called discernment. Describe another example of discernment that you have read about in the book.

Chapter 15

- 1. What happened on October 5, 1957 that changed the mood of the United States?
- 2. What was the ruling from Brown v. Board of Education?

Chapter 16

- 1. What are the obstacles of launching and returning an object into space?
- 2. What does NASA stand for?

Chapter 17

1. What qualities did Katherine possess that permitted her to earn a seat at the table?

Chapter 18

- 1. Who were the Mercury 7?
- 2. What was Katherine's task for Project Mercury?

Chapter 19

1. What was Mary Jackson's special project, outside of Langley, that she worked on?

Chapter 20

- 1. What is a "sit-in" or "sit-down"?
- 2. What is FORTRAN?
- 3. In addressing one of the major problems of orbital flight, communication, what did the engineers have to do?
- 4. Who was the first American in space?

Chapter 21

- 1. What was unique about John Glenn's mission?
- 2. What obstacles did he face while in flight?

Chapter 22

- 1. Whom did Katherine influence?
- 2. What is the risk standard of "three nines?"

Chapter 23

- 1. What happened on July 20, 1969?
- 2. What kind of effect did this event have to the United States?

Journal Response Questions for after Whole Class Discussion, Small Group Discussion, or Gallery Walk

Chapters 1-3

1. In 1929, the school Vaughan was teaching at closed due to lack of funding because of the depression. This left no public education facilities available for black Americans although schools were open and funded for white Americans. Do you think this was a justified practice considering the economic state of the country? How do you think this would make you feel if you were a person of color?

Chapters 4-6

2. Vaughan experienced a great deal of tension when she began to work at Langley. What were the factors that contributed to the tension and do you think those factors could still exist today?

Chapters 7-8

1. Vaughan possessed many qualities that contributed to her ability to succeed at Langley. What were some of those qualities and how did they specifically help her achieve? Be very specific on the qualities with an example of how she demonstrated it. Do you think these qualities would be applicable today?

Chapters 9-10

1. The women of West Computing had the challenge of not only being black but also being a woman. Even today, in the fields of math, science and engineering, the expectations are low for women to succeed. In addition, women often must choose between family and career, whereas men are expected to have both. What are your thoughts on this inequity? What are your thoughts for your future self, when you may be faced with choosing family or career?

Chapters 11-12

1. When Katherine Gobel came to West Virginia University, her experience was dramatically different in compared to what was expected based upon what was happening across the southern United States. The phrase "Expect the worst and hope for the best" is often used when faced in situations such as this. Describe the pros and cons to having this mindset when faced with a new experience.

Chapters 13-14

1. The women of Hidden Figures faced many obstacles in their career path. Mary Jackson had to petition the court just to be able to enter the white high school so that she could take engineering classes. These experiences are called adverse life events and how we manage them has the power to change our life trajectory. Describe an adverse life event that you have experienced including how you handled it (good or bad). What did you learn from this experience that knowing now you would do differently in the future?

Chapters 15-16

1. The presence of a common "enemy" can be an extremely motivating force to getting people to work together who normally would not. The events of 1957 launched the "Cold War." Describe what you think it would have been like had you been a teenager in the Soviet Union at this time. Include all aspects of your life such as what you watched on TV, what you listened to on the radio, how you dressed, what you read about in the newspapers, what you discussed in school, etc.

Chapters 17-18

1. The quality of being curious is fundamental to our understanding the world around us. In addition to asking questions, how you ask those questions is important too. In the world we live in today there is a fine line between being assertive and being aggressive, with the former seen as a positive quality and the later as a negative quality. For women this is especially so. Katherine was persistent and polished when asking why she couldn't be at the meetings. Do you think this behavior (encouraging questioning) is supported in classrooms or not? Support your position with examples.

Chapters 19-20

A theme throughout the book is "Social Progress through Science." Americans can improve our society
with the acquisition of scientific knowledge. Mary Jackson firmly believed in this philosophy. She and
her colleague, Emma Jean (who was white) presented a lecture at an all-black junior high school.
Describe what it might have felt like to be Emma Jean, include what Ms. Jean might have experienced
socially outside of work. Do you think one could have this type of experience today?

Chapters 21-23

1. Throughout the book, the women of Hidden Figures endured experiences that would define them as courageous. These women left a legacy for the future for all persons of color. Although you have only lived a small segment of your life, think of an experience you have had in which you exhibited those qualities that these women possessed. Describe how you overcame the adverse event and how you would use this to leave a legacy for those who come after you such as younger siblings or your children.